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ABSTRACT

Exploratory research on some aspects of the cultural theory of education in concept development are reviewed and the research findings are outlined. Three hypotheses tested are 1) that children will have cultural mappings (systems of codes for perception and action) that differ from adults; 2) that children at different ages will show a development in the complexity of these rules; and 3) that this development will be in the direction of the rules held by those who have a stable and consistent pattern of effectively structured encounters with the children. The outline of the findings focuses on the development of selected dimensions of the work domain found in children in a suburban elementary school from ages 5 to 12 using a picture-sorting technique. Cultural premises of work held by children and adults are stated. It is shown that children and adults who share the same cultural premise about work have used that premise to construct different work protocols. Young children seem to use principles that are unidimensional and perceptionally concrete, while adults have categories that are complex, multidimensional and perceptually abstract. The development in complexity for children is toward the adult principles. The findings demonstrate that children have principles of cognitive mapping that are internally consistent and different from those of adults. (Author/KSM)

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TRANSACTIONS OF COGNITIVE EQUIVALENCE IN HIDDEN CURRICULUM DOMAINS, "WORK" AND "PLAY"

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The purpose of this paper is to review some aspects of the cultural theory of education which have provided the impetus for exploratory research in concept development conducted during the last year. This is followed by an outline of findings.

Psychological studies of cognitive development in children, as well as recent research into the acquisition of language by children are providing increasing evidence that children operate with organizing principles of cognition that differ markedly from those used by adults. These structures form as a result of the child's active interaction with his environment and they develop in complexity.

Recent work in anthropology has treated the description of culture as the task of describing codes or rule systems for perception and action. Codes which are the result of efforts by the ethnographer to order observed and elicited phenomena according to the organizing principles used by the people studied. The informants in this type of study are always adults; the implicit assumption being that the children either use the same rules as adults or that the children do not yet have rules and thus would provide erroneous or incomplete information. This assumption seems to underlie much of the current research in cultural transmission The assumption stems from what has been called the "transportation theory of communication." In this model the sender has a message which he actively sends to a passive receiver who is without information until the message arrives.

A basic proposition of the current cultural theory of education is that children are not passive receivers. Children of all ages are actively structuring their experience with their environment in a way that results in a system of codes or rules for perception and action. It is a system which differs from that of adults, but one which is in no sense incomplete or erroneous in terms of the action and experience of children, and one which can be the subject of ethnographic description.

To amplify this point, I call your attention to the current ethnography in anthropology and education. There are a number of fine studies of the situation that exists when the teachers in a school are members of one cultural group and the children are members of a different group. But even these ethnographies assume that the children are not using rules of their own, but are using the fully elaborated mappings which describe the culture of their parents. What I want to emphasize is that, even where the children and adults are of the same culture group, there exist some marked differences between the cognitive mappings of the children and those of the adults.

It is the career of transactions in which these differences are reduced that we call the process of cultural transmission. To understand this process, it is necessary to map out the transitions that take place between those cultural rules being used by the children and those being used by adults. For this purpose, the following empirically testable propositions were set forth, to be explored in a cognitive ethnography of children:

First: That children will have cultural mappings that differ from those of adults.

Second: That children at different ages will show a development in the complexity of these rules.

Third: That this development will be in the direction of the rules held by those people who have a stable and consistent pattern of effectively structured encounters with the children.

To test these propositions, I chose to examine the development of the concepts of work and play in a suburban elementary school with children from ages five to twelve.

In turning now to an outline of some findings, I will be using the concepts of "premise" and "protocol" which are proposition number six in the theory paper.

In this outline I will only focus on the development of selected dimensions of the work domain--beginning with a cultural premise of work held by the children and by adults.

The adult premise can be stated as follows: It is as if there is an order or pattern in the world that exists naturally and as a result of man's efforts. The discovery, creation and maintenance of this order requires "know-how." I use this expression because it is the one that informants use most frequently.

Work is the acquisition and use of "know-how." This applies to all ordered patterns, from knowing how to wash clothes to knowing how to build a nuclear reactor. "Knowing how" entails a responsibility to continue to create or maintain the order. This responsibility is a basis for adult protocols of controlled or restrained behavior.

The premise also states that "children do not know how." This is a general statement applying to all things. Since they don't know how, they can't work independently and don't have the entailed constraints of responsibility. However, children can "learn how" and they can "help" people who do know how. These actions by children are called work by adults and no others.

The premise that children hold is derived from the imposition of this adult structure on their activity. They recognize that they don't know how, and this places them in a position where they are excluded from doing many things. This results in what I call the basic situation of children, which they express when they say, "There is nothing to do." For children this void is filled with activity aimed at avoiding boredom. This activity falls into

two large classes: "Things you have to do," and "Things you can do." What you "have to do" is work; what you "can do" is play. Thus children's activities can be defined by relationships between people. For instance, they say, "Can you play?"; "Can I play with you?"; "Do you want to play with me?"; or "Do I have to do it?"; etc.

To summarize this first set of findings, I have outlined an example of a case in which children and adults who share the same cultural premise about "know-how" have used that premise to construct different work protocols.

I will now turn to a brief discussion of the different types of organizing principles that children and adults use. These findings are based on a picture-sorting technique.

Children of ages 5 to 6 did not form groups of pictures labeled "work," while they were able to label some pictures individually as work. They were also able to form other small groups of up to three pictures on the basis of concrete criteria. For example: A picture of a skier, a figure skater and a man running a snow-blower go together because they all have snow; or, a picture of a woman baking a pie, one of a man waxing a floor, and one of a doctor were put into a group by a 5-year old boy who said, "Baking a pie makes a smell, waxing the floor makes a smell and doctors have medicine that smells, so they all go together because they have smells." This is an age where children seem to focus on perceptually concrete dimensions for classification.

Children ages 7 to 8 formed small groups of 4 to 7 pictures that they labeled work. The dimensions they used were still unitary and perceptually concrete. For example: "These people are all using machines." The older children in this age range began to use a single, more abstract dimension that requires inference, such as: "These are dangerous things; you have to know how to do them or you'll get hurt," or "It's work because they're all helping

people." At this point they also begin to depreciate play. For example: "They're just playing," or "It's only play because they're not really doing anything."

Between ages 8 and 11 they used more than one dimension in combination and began to make more inferences about the behavior viewed in the pictures. The dimension of helping people was strong. This is the most common relationship a child finds himself in when adults call his activity work. Children are working when they help adults or help their friends. This seems to be an important dimension that continues into adulthood. (Note the "Help Wanted" column in the classified section of a newspaper.)

Beyond the age of twelve, children begin to move to the adult pattern, and I will turn to a brief outline of those principles now.

Adults formed large groupings using several dimensions at once. The dimensions were not concrete but were based on inferences about the mental state of the actors. They infered motivation and outcome as well as current feeling in the activity. They had a dual system: a "personal system" and a "social system," that is, adults say "Do you mean work the way I see it or the way I know everyone else would agree on?" In their personal system they used dimensions labeled "want to," "need to," "have to." The labels work or play were used for other people's activities as a more general gloss to cover a host of inferences about them. This allows dual classification. For example: (1) "The man with the snow-blower is working, (2) but it looks like he's an office worker and when he gets home he likes to get out in the fresh air and get some exercise, so I don't think it's really work." The first classification is social, the second is personal.

In this way teachers are able to perform dual classification of children's activities. The kindergarten has toys selected for educational value. A kindergarten teacher says, "In free time they can play with whatever they want

to--but I try to watch them to see what they are working on." Here again the premise is operating that what children do is play, but when they gain know how or discover a relationship they are working.

To summarize this section, the findings are that young children use principles that are uni-dimensional and perceptionally concrete, while adults have categories that are complex, multidimensional and perceptually abstract. Adult categories allow the classification of a single event into more than one class. An investigation of children at different ages shows a development in complexity toward the adult principles.

So far I have discussed the premise of "know-how" and some organizing principles of adults and children. I turn now to the way that the concrete criterion of the children interacts with the adult protocol of control based on know-how.

In school, children are confronted by a work structure in which they see a succession of tasks of increasing difficulty. They find themselves in a situation in which there are older children doing things they don't know how to do and younger children doing things they already know. By first grade children have begun to use a dominant metaphor: the work that is coming will be harder and harder and last year's work was easy, with lots of play. A dimension of this metaphor is the up-down pattern. By first grade children say, "Next year I will go up to second grade," or, "Up in fourth grade you have to do hard work." "If you fail you have to go back down a grade." Using this structure, by third grade children are very aware of the nature of progress: that is, that work means change and movement. Children are learning to work their way to the top.

This pattern is united with another phenomenon that I call outcome displacement. At age 5 the general work children do is concrete, having an immediate tangible outcome. For example, in kindergarten they often work on

projects involving making things with paper. The teacher holds up an example of what the class will make, and then proceeds to guide the children through its construction step by step until each child has a finished item in hand. As a child progresses up through the grades, the work to be performed becomes less concrete and the outcomes are less defined or immediate being perceived only distantly, if at all. The structure and goals of the work are known by the teacher but not the children. What the child does know is that if the outcome is not achieved, he or she has failed and will not move up. Work thus becomes the effort to move oneself forward or upward through harder and harder tasks in order to avoid a distant, undefined risk of failure.

A related phenomenon is the development of individualized work. The teacher addresses the children as a group and teaches them all the same thing. But when it is time for the children to perform, they are asked to do so individually. When writing assignments they are told, "Keep your eyes on your own paper," or "Do your own work." In addition, they are told to keep quiet and they discover that they should not touch each other while working: "Leave John alone," or "Don't bother him, he's working."

By second grade children are aware of the need to work to progress as isolated individuals within a group of people working on the same tasks. A conflict begins that lasts throughout school: it is the prisoner's dilema of whether to keep your work to yourself or let your friends copy.

At this point the relationship between the concrete criteria of children and the adult control protocol can be made clear. It appears that the displacement of outcome and individualization of work stem from the cultural premise of "know-how" and form a basis for teacher protocols of behavior control. For example, in second grade the teacher will control the behavior of children who fool around by saying, "John is your work done?", "Jim, are you finished?", "Mary, don't you have something to do?" or "Susan, show me your work."

The emphasis on individualization and progress through work gives rise to another important question. How do children evaluate themselves? The children in school say that their work is to learn. So I asked them "How do you know when you have learned something?" The children translated this question to read, "How do you know when you know something." The answers were of two types: "I know because the teacher says so," or "I know because I can see that I can do something that other kids can't do and before I couldn't do it either." In sum, the children's method of evaluation is concrete and based on authority and comparison.

I can now describe some developments which have taken place in the cognitive mappings of children who have reached fifth grade. These developments stem from the concrete method of evaluation used by children and again the control protocols of teachers. I will be dealing with terms used in the classroom for four categories of children.

The categories are "children with potential," "smart or dumb children," "troublemakers" and "good workers." I am using data from a sociogram technique. Teachers and children agree on who are troublemakers and good workers but their agreement is low on who is smart or dumb.

Troublemaker is a concrete category defined by who is disciplined most by the teacher and the evidence is available to all. Good worker is also fairly concrete being defined by quiet with correct work done on time.

Smart-dumb is not a concretely defined category for teachers, but it is for children since they use concrete evaluation. They compare test results; someone with a bad score is dumb, or if a child is called on and doesn't know the answer he or she is dumb.

Here the interaction between the control protocol of work and the concrete criteria of evaluation is clear. When the teacher sees someone fooling around

the child is called on to answer a question and is usually unable to respond correctly. This subdues the child but in the eyes of the children he is defined as dumb.

These first three categories are used in a circular way by children: For example: "He's a troublemaker--because he doesn't get his work done--because he's dumb," or "He's dumb--I can tell because he never gets his work done--and that's because he's always in trouble."

I believe that the circularity stems from the fact that the same concrete information is used to define all three categories. Teachers don't rely solely on concrete information so the membership of their categories differ from that of the children.

Children were not able to operate with the category called "people with potential." This is a category the teacher uses, and it is based on abstract relations which are contrary to concrete fact. It is important to note that children don't use this category even though the teachers provide the information. For example the teacher says, "You can do better than this," or "This is not your best work" or "Why don't you do your best work all the time?" Thus the teacher contradicts the concrete information that a child has failed a test by providing information about his potential. But the children make use only of the concrete information and say he is dumb.

This paper is necesarily brief and many points have been left unexplored. I can conclude by saying that I have tried to demonstrate that children have principles of cognitive mapping that are internally consistent and different from those of adults. I have done this by exploring the structure of these mappings at different period of development. But a description of states in time is not enough to understand the process. There must be an account of how the transition between states takes place. I have begun to explore a

model in which the individual is an open system dealing actively with environmental diversity by organizing it into classes of experience which become the basis for future actions, perceptions and organizations. This process is influenced by pattern or organization existing in the environment. A significant source of pattern in the environment stems from the actions of other individuals. Individuals with a high density of encounters tend to share classificatory systems as a result of the feedback effect of their patterned behavior on each other. Culture then is the creation and maintenance of these systems. As such there is no distinction between culture and transmission. Culture is transacted not transmitted.